

COMPACT LOW AMP ELECTRONIC CIRCUIT BREAKER FOR RESIDENTIAL LOAD CENTER

Abstract of Disclosure

A panelboard configured for distributing electricity from a power source, the panelboard comprising circuitry for distributing the electricity from the power source, the circuitry comprising a plurality of branch circuits for distributing electricity to associated loads; a plurality of branch circuit breakers, each branch circuit breaker intermediate the power source and the plurality of branch circuits; and an electronic control module for controlling the main circuit breaker and the plurality of branch circuit breakers, the electronic control module provides a protection function and a monitoring function of the circuitry, each branch circuit breaker of the plurality of branch circuit breakers includes; a pair of separable contacts, an electromagnetic actuator in electrical communication with the electronic control module for operably controlling the pair of separable contacts, and a current transformer configured to sense current on the circuitry to one of the associated loads. A method is also described for providing overcurrent protection and control to an electric circuit with a single controller, the method comprising: receiving a trip setting value selected for each branch circuit of a plurality of branch circuits; storing the trip setting value in non-volatile memory; receiving a plurality of sensed signals from a current sensing device employed in the each branch circuit indicating a current therethrough; processing the plurality of sensed signals to detect an overcurrent condition in the each branch circuit; and generating a trip signal to an electromagnetic device coupled to separable contacts employed in each circuit breaker of the each branch circuit for interrupting current therein when an overcurrent condition is detected.

Figures

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